Maryland Licensed Tree Expert Exam Study Guide

For Exam Domain:

Pruning

Version 2.0

Date: 11/05

Pruning is defined as the selective removal of plant parts. Pruning objectives shall be established prior to beginning any pruning operation. Specifications for pruning are to include the location and size range of parts to be removed, the pruning objectives, and the pruning type or types to be employed.

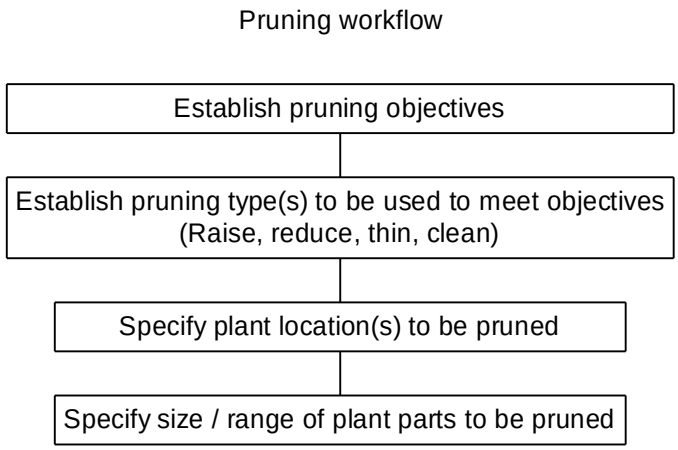

Figure 1 - Pruning specification workflow

Equipment and work practices that damage living tissue and bark beyond the scope of work should be avoided. Climbing spurs shall not be used when climbing and pruning trees, except in special circumstances as noted in ANSI A300 (Part 1)-2001 Pruning (exceptions: when limbs are more than a throwline distance apart and there is no other means of climbing the tree; when the bark is thick enough to prevent damage to the cambium; and, in remote or rural utility rights-of-way).

A pruning cut that removes a branch at its point of origin shall be made close to the trunk or parent limb without cutting into the branch bark ridge or collar and without leaving a stub. A pruning cut that reduces the length of a branch or parent stem should bisect the angle between its branch bark ridge and an imaginary line perpendicular to the branch or stem. To prevent damage to the parent limb when removing a branch with a narrow branch attachment, the final cut should be made from the outside of the branch inwards.

Where necessary, ropes or other equipment shall be used to lower large branches or portions of branches to the ground. If a limb is large enough that the cambium may rip during pruning, it should be removed by making three cuts. The first cut eliminates the chance of bark tearing as the limb is removed. The second cut allows the limb to drop smoothly when the weight is released. The third cut removes the remaining stub. Severed limbs shall be removed from the crown upon completion of the pruning, at the end of the workday, or at times when the tree will be unattended.

Flush cuts are no longer recommended as ring shakes, discolored wood, and greater decay are associated with flush cuts. Topping is the reduction of a tree's size using heading cuts that shorten limbs or branches back to a predetermined crown limit. Topping is NOT an alternative term for crown reduction, directional pruning, drop-crotch pruning, and lateral pruning, and is different than pollarding. Topping has been shown to increase the risk of tree failure. Cutting back to a lateral that is insufficient in size is much like topping.

Wound treatments should not be used to cover wounds or pruning cuts, except when recommended for certain specific reasons.

To obtain the defined objective, the growth cycle of the species, the structure of the species, and the type of pruning to be performed should be considered. Not more than 25 percent of the foliage of a branch or limb should be removed when it is cut back to a lateral, and that lateral should large enough to assume apical dominance. Not more than 25 percent of the foliage on a mature tree should be removed within a growing season.

Heading should be considered an acceptable practice for shrub pruning and specialty pruning, but not for other types of pruning. For most conifers, if branches are headed back to older wood with no foliage the branch stub usually dies.

Removing all of the inner laterals and foliage on branches is referred to as lion's tailing. The negative effects of lion's tailing include reduced branch taper, sunburned bark tissue, and weakened branch structure and breakage. Topping and lion's tailing shall be considered unacceptable practices for pruning trees.

Pruning type	What it consists of	What the arborist shall/should specify
Clean	Selective pruning to remove one or more of the following parts: dead, diseased and/or broken branches.	- Location of parts to be removed (shall) - Size range of parts to be removed (shall)
Thin	Selective pruning to reduce density of live branches. Should result in an even distribution of branches on individual limbs and throughout the crown.	- Location of parts to be removed (shall) - Percentage of foliage (shall) - Size range of parts to be removed (shall)

Raise	Selective pruning to provide vertical clearance.	- Vertical clearance (should) - Location of parts to be removed (should) - Size range of parts to be removed (should)
Reduce	Selective pruning to decrease height and/or spread. Consideration shall be given to the ability of a species to tolerate this type of pruning.	- Location of parts to be removed (should) - Clearance (should) - Size range of parts (should)

Table 1 - Pruning types

Pruning type	What it consists of	What the arborist shall/should specify
Young tree pruning	Young tree pruning limited to cleaning.	N/a
Espalier	A combination of pruning, supporting, and training branches to orient a plant in one plane.	N/a
Pollarding	The maintenance of a tree by making internodal cuts to reduce the size of a young tree, followed by the annual removal of shoot growth at its point of origin.	N/a
Restoration	Selective pruning to improve the structure, form, and appearance of trees that have been severely headed, vandalized, or damaged.	- Location of parts to be removed (should) - Size range of parts (should) - Percentage of watersprouts to be removed (should)
Vista pruning	Selective pruning to allow for a specific view.	- Location of parts to be removed (should) - Size range of parts (should) - Percentage of foliage to be removed (should)
Palm pruning	Palm pruning	N/a

Table 2 - Specialty pruning types

When performing utility pruning in an urban/residential environment, pruning cuts should be made the same way as non-utility pruning cuts are made. When performing utility pruning in an urban/residential environment, the facility/utility pruning should be accomplished by making a minimum number of cuts. Trees directly under and growing into facility/utility spaces should be removed or pruned. Branches should be cut to laterals or the parent branch and not to a pre-established clearing limit.

Pruning	Specialty pruning	Utility crown reduction in an urban/residential environment	Utility crown reduction in a rural/remote environment
A pruning cut that removes a branch at its point of origin shall be made close to the trunk or parent limb without cutting into the branch bark ridge or collar and without leaving a stub.	A pruning cut that removes a branch at its point of origin shall be made close to the trunk or parent limb without cutting into the branch bark ridge or collar and without leaving a stub.	A pruning cut that removes a branch at its point of origin shall be made close to the trunk or parent limb without cutting into the branch bark ridge or collar and without leaving a stub.	Cuts should be made close to the main stem, outside of the branch bark ridge and branch collar.
Where necessary, ropes or other equipment shall be used to lower large branches or portions of branches to the ground. If a limb is large enough that the cambium may rip during pruning, it should be removed by making three cuts.	Where necessary, ropes or other equipment shall be used to lower large branches or portions of branches to the ground. If a limb is large enough that the cambium may rip during pruning, it should be removed by making three cuts.	Where necessary, ropes or other equipment shall be used to lower large branches or portions of branches to the ground. If a limb is large enough that the cambium may rip during pruning, it should be removed by making three cuts.	Precautions should be taken to avoid stripping or tearing of bark or excessive wounding.
Topping (using heading cuts to shorten limbs to a predetermined crown limit) is not an acceptable practice.	Heading should be considered acceptable when needed to reach a defined objective.	Topping (using heading cuts to shorten limbs to a predetermined crown limit) is not an acceptable practice.	Not addressed in standard.

Table 3 - Comparison of standards in various situations